

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Reconsideration based on the following remarks is respectfully requested.

**I. The Title Satisfies All Formal Requirements**

The Office Action objects to the title as not being descriptive. The title is amended to obviate this objection. Withdrawal of the objection to the title is respectfully requested.

**II. The Claims Define Patentable Subject Matter**

The Office Action rejects claims 1-21 under 35 U.S.C. §102(e) over Arkles et al. (U.S. Patent Publication No. US2002-0119327A1). This rejection is respectfully traversed.

Arkles does not disclose the method for fabricating a film of claim 1, the method of fabricating a semiconductor device of claim 20 or the method for fabricating a memory device of claim 21 including supplying electrical energy to a mixture of noble gas and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species. Arkles also does not disclose a method for fabricating a film including supplying electrical energy to a mixture of noble gas and reactant gas at a total pressure of 1 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species, as recited in claim 16. Arkles also does not disclose a method for fabricating a film including supplying optical energy with a light of wavelength less than 200 nanometer to a mixture of noble gas and reactant gas to create reactive species, the reactive species forming a film on a substrate, the optical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species, as recited in claim 17.

Instead, Arkles discloses a method for near atmospheric pressure chemical vapor deposition of a silicon based film on to a substrate including a step of introducing into a deposition chamber at about atmospheric pressure an iodesilane precursor in the vapor state having at least three iodine atoms bound to a silicon, and at least one reactant gas, and maintaining a deposition temperature within the chamber from about 250°C to about 650°C for a period of time. The Office Action asserts that paragraph 38 of Arkles discloses supplying electrical energy to a gas mixture of noble gas and reactant gas. However, this portion of Arkles merely discusses applying an electrical bias to the substrate. Arkles disclose the use of noble gases, but the noble gases are used merely to dilute the precursor.

Further, the Office Action asserts that paragraph 44 of Arkles discloses supplying optical energy with a light of a wavelength less than 200 nm to a mixture of noble gas and reacting gas to create reactive species. However, paragraph 43 of Arkles discloses that the optical energy is applied to the interface between the substrate and a precursor to encourage film deposition. Thus, Arkles does not teach the step of supplying optical energy to a mixture of noble gas and reacting gas to create reactive species.

For at least these reasons, it is respectfully submitted that claims 1, 16, 17, 20 and 21 are patentable over Arkles. The dependent claims are likewise patentable over Arkles for at least the reasons discussed as well as for the additional features they recite. Applicant respectfully requests that the rejection under 35 U.S.C. 102 be withdrawn.

### **III. Conclusion**

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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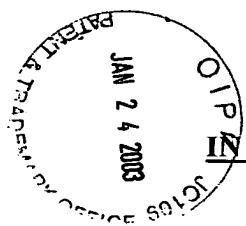
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## APPENDIX

### IN THE CLAIMS:

Claims 1, 16, 17, 20 and 21 have been amended as follows:

1. (Amended) A method for fabricating a film, the method comprising:

supplying electrical energy to a gas mixture of noble gas and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species.

16. (Amended) A method for fabricating a film, the method comprising:

supplying electrical energy to a gas mixture of noble gas and reactant gas at a total pressure of 1 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species.

17. (Amended) A method for fabricating a film, the method comprising:

supplying optical energy with a light of wavelength less than 200 nanometer to a mixture of noble gas and reactant gas to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species.

20. (Amended) A method for fabricating a semiconductor device, the method comprising:

a step of forming a film by supplying electrical energy to a mixture of noble gas and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species.

21. (Amended) A method for fabricating a memory device, the method comprising:

a step of forming a film by supplying electrical energy to a mixture of noble gas and reactant gas at a total pressure of 90 kPa to 110 kPa to create reactive species, the reactive species forming a film on a substrate, the electrical energy being used for producing noble gas radicals and ions, the noble gas radicals and ions colliding with the reactant gas to form the reactive species.